IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Krishnaswamy Venkatesh Prasad et al.

Group Art Unit: 2615

Examiner: George C. Monikang

Serial No.: 10/707,671

Filed: December 31, 2003

For: VEHICLE SPEECH RECOGNITION SYSTEM

Attorney Docket No.: 81094727 / FMC 1553 PUSP

APPEAL BRIEF UNDER 37 C.F.R. § 41.37

Mail Stop Appeal Brief - Patents
Commissioner for Patents
U.S. Patent & Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This is an Appeal Brief from the final rejection of claims 36-70 of the Office Action mailed on November 29, 2007 for the above-identified patent application.

I. REAL PARTY IN INTEREST

The real party in interest is Ford Motor Company ("Assignee"), a corporation organized and existing under the laws of the state of Delaware, and having a place of business at Dearborn, Michigan 48126, as set forth in the assignment recorded in the U.S. Patent and Trademark Office on April 26, 2004 at Reel 014530/Frame 0148.

II. RELATED APPEALS AND INTERFERENCES

There are no appeals, interferences or judicial proceedings known to the Appellant, the Appellant's legal representative, or the Assignee which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 36-70 are pending in this application. Claims 1-35 have been canceled. Claims 36-70 have been rejected and are the subject of this appeal.

IV. STATUS OF AMENDMENTS

No amendment has been filed subsequent to the final rejection.

V. SUMMARY OF CLAIMED SUBJECT MATTER

This application includes three (3) independent claims, *i.e.*, claims 36, 49 and 59.

Claim 36 is directed to a vehicle control system comprising one or more vehicle components, a module, and a dialog-based speech recognition component (e.g., p. 4, line 23 - p. 5, line 4 and Figure 1, elements 10-18). The one or more vehicle components adjusts secondary vehicle functions (e.g., p. 4, line 23 - p. 5, line 2 and Figure 1). The module groups parameters together for each secondary vehicle function to form a vehicle control mode (e.g., p. 8, line 4 - p. 9, line 16 and Figure 2, elements 54-70). The vehicle control mode is selectable by a vehicle occupant such that the vehicle occupant is capable of specifying parameters for a selected vehicle control mode (e.g., p. 8, line 4 - p. 9, line 16 and Figure 2, elements 54-70). The vehicle control mode comprises a communication mode in which the vehicle occupant specifies parameters related to a telephone located in a vehicle passenger compartment (e.g., p. 13, line 20 - p. 14, line 24 and Figure 5). The dialog-based speech recognition component is adapted to respond to voice commands from the vehicle occupant (e.g., p. 5, line 11 - p. 7, line 25 and Figure 1, element 20). The speech recognition component is further adapted to enter into the communications mode and to communicate with the one or more vehicle components associated with each vehicle control mode (e.g., p. 13, line 20 - p. 14, line 24 and Figure 5). The speech recognition component comprises a first translating component, a prompting component, a second translating component and a human machine interface (e.g., p. 5, line 4 - p. 8, line 2 and Figure 1). The first translating component is adapted to translate a voice command from a vehicle occupant into a form which

communicates a control signal to the one or more vehicle components and specifies which vehicle control mode to enter into (e.g., p. 6, line 15 - p. 7, line 11 and Figure 1). The prompting component is adapted to prompt the vehicle occupant in audio to input information for entering into the communications mode if additional information is needed than the information contained in the voice command (e.g., p. 6, line 28 - p. 7, line 11 and Figure 1). The prompting component is further adapted to prompt the vehicle occupant in audio to input information to disambiguate between a plurality of matching data by prompting the vehicle occupant to select a particular set of data from the matching data while in the communications mode (e.g., p. 13, line 20 - p. 14, line 23 and Figure 5, elements 62, 322, 324, 326, 328, 332 and 334). The second translating component is adapted to translate the information received from the vehicle occupant in response to the prompting component prompting the vehicle occupant to input information so that the received information is translated into a form which communicates a control signal to the one or more secondary vehicle components (e.g., p. 7, line 11 - p. 7, line 26 and Figure 1). The human machine interface is further adapted to communicate with the one or more vehicle components, the human machine interface is capable of communicating in combination with and separate from the speech recognition component (e.g., p. 5, line 11 - p. 6, line 14, p. 7, line 27 - p. 8, line 2 and Figure 1, element 22).

Claim 49 is directed to a vehicle control system comprising one or more vehicle components, a module, and a dialog-based speech recognition component (e.g., p. 4, line 23 - p. 5, line 4 and Figure 1, elements 10-18). The one or more components adjusts secondary vehicle functions (e.g., p. 4, line 23 - p. 5, line 2 and Figure 1). The module groups parameters together for each secondary vehicle function to form a vehicle control mode (e.g., p. 8, line 4 - p. 9, line 16 and Figure 2, elements 54-70). The vehicle control mode is selectable by a vehicle occupant such that the vehicle occupant is capable of specifying parameters for a selected vehicle control mode (e.g., p. 8, line 4 - p. 9, line 16 and Figure 2, elements 54-70). The vehicle control mode comprises a communication mode in which the vehicle occupant specifies parameters related to a telephone located in a vehicle passenger compartment (e.g., p. 8, line 4 - p. 9, line 16 and

Figure 2, elements 54-70). The dialog-based speech recognition component is adapted to respond to voice commands from a vehicle occupant (e.g., p. 5, line 11 - p. 7, line 25 and Figure 1, element 20). The speech recognition component is further adapted to enter into the communications mode and to communicate with the one or more vehicle components associated with each vehicle control mode (e.g., p. 13, line 20 - p. 14, line 24 and Figure 5). The speech recognition component comprises a first translating component, a prompting component, and a second translating component (e.g., p. 5, line 4 - p. 8, line 2 and Figure 1). The first translating component is adapted to translate a voice command from a vehicle occupant into a form which communicates a control signal to the one or more vehicle components and specifies which vehicle control mode to enter into (e.g., p. 6, line 28 - p. 7, line 11 and Figure 1). The prompting component is further adapted to prompt the vehicle occupant in audio to input information for entering into the communications mode if additional information is needed than the information contained in the voice command (e.g., p. 6, line 28 - p. 7, line 11 and Figure 1). The prompting component is further adapted to prompt the vehicle occupant in audio to input information to disambiguate between a plurality of matching data by prompting the vehicle occupant to select a particular set of data from the matching data while in the communications mode (e.g., p. 13, line 20 - p. 14, line 23 and Figure 5, elements 62, 322, 324, 326, 328, 332 and 334). The second translating component is further adapted to translate the information received from the vehicle occupant in response to the prompting component prompting the vehicle occupant to input information so that the information received is translated into a form which communicates a control signal to the one or more secondary vehicle components associated with the selected vehicle mode (e.g., p. 7, line 11 - p. 7, line 26 and Figure 1).

Claim 59 is directed to a method for controlling secondary vehicle functions. The method comprises adjusting secondary vehicle functions with one or more vehicle components and grouping parameters together for each secondary vehicle function to form a vehicle control mode (e.g., p. 4, line 23 - p. 5, line 4 and Figure 1, elements 10-18). The vehicle control mode is selectable by a vehicle occupant such that the vehicle occupant is capable of specifying

parameters for a selected vehicle control mode (e.g., p. 8, line 4 - p. 9, line 16 and Figure 2, elements 54-70). The vehicle control mode comprises a communications mode in which the vehicle occupant specifies parameters related to a telephone located in a vehicle passenger compartment (e.g., p. 13, line 20 - p. 14, line 24 and Figure 5). The method further comprises responding to voice commands from the vehicle component with a dialog-based speech recognition component (e.g., p. 5, line 11 - p. 7, line 25 and Figure 1, element 20). The speech recognition component is further adapted to enter into the communications mode and communicate with the one or more vehicle components associated with each vehicle control mode (e.g., p. 13, line 20 - p. 14, line 24 and Figure 5). The speech recognition component a communications mode, a first translating component, a prompting component, and a second translating component (e.g., p. 5, line 4 - p. 8, line 2 and Figure 1). The first translating component is adapted to translate a voice command from a vehicle occupant into a form which communicates a control signal to the one or more vehicle components and specifies which vehicle mode to enter into (e.g., p. 6, line 15 - p. 7, line 11 and Figure 1). The prompting component is further adapted to prompt the vehicle occupant in audio to input information for entering into the communications mode if additional information is needed than the information contained in the voice command (e.g., p. 6, line 28 - p. 7, line 11 and Figure 1). The prompting component is further adapted to prompt the vehicle occupant in audio to input information to disambiguate between a plurality of matching data by prompting the vehicle occupant to select a particular set of data from the matching data while in the communications mode (e.g., p. 13, line 20 - p. 14, line 23 and Figure 5, elements 62, 322, 324, 326, 328, 332 and 334). The second translating component is further adapted to translate the information received from the vehicle occupant in response to the prompting component prompting the vehicle occupant to input information so that the received information is translated into a form which communicates a control signal to the one or more secondary vehicle components (e.g., p. 7, line 11 - p. 7, line 26 and Figure 1). The method further comprises communicating with the one or more vehicle components with a human interface machine, the human machine interface is capable of

communicating in combination with and separate from the speech recognition component (e.g., p. 5, line 11 - p. 6, line 14, p. 7, line 27 - p. 8, line 2 and Figure 1, element 22).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 36-70 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Everhart et al.* U.S. Patent No. 6,240,347 in view of *Stammler et al.* U.S. Patent No. 6,839,670.

VII. ARGUMENT

A. Claims 36-70 Are Patentable Under 35 U.S.C. § 103(a) Over *Everhart et al.* in view of *Stammier et al.*

Claims 36-70 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Everhart et al.* U.S. Patent No. 6,240,347 in view of *Stammler et al.* U.S. Patent No. 6,839,670.

M.P.E.P. § 2143 provides:

> [t]he rationale to support a conclusion that the claim would have been obvious is **that all the claimed elements were known in the prior art** and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination yielded nothing more than predictable results to one of ordinary skill in the art. *KSR International Co. v. Teleflex*, . . . 82 USPQ2d 1385, 1395 (2007); *Sakraida v. AG Pro, Inc.*, 425 U.S. 273, 282, 189 USPQ 449, 453 (1976); *Anderson's-Black Rock, Inc. v. Pavement Salvage Co.*, 396 U.S. 57, 62-63, 163 USPQ 673, 675 (1969); *Great Atlantic & P. Tea Co. v. Supermarket Equipment Corp.*, 340 U.S. 147, 152, 87 USPQ 303, 306 (1950). "[I]t can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does." . . . 82 USPQ2d at 1396. **If any of these findings cannot be made, then this rationale cannot be used to support a conclusion that the claim would have been obvious to one of ordinary skill in the art.**
>
> (Emphasis added.)

1. Claim 36 Is Separately Patentable Under 35 U.S.C. § 103(a) Over *Everhart et al.* In View Of *Stammler et al.*

The proposed combination of *Everhart et al.* and *Stammler et al.* fails to demonstrate the claimed invention is known in the art. For instance, claim 36 requires, *inter alia*, "a prompting component adapted to prompt the vehicle occupant in audio to input information . . . to disambiguate between a plurality of matching data by prompting the vehicle occupant to select a particular set of data from the matching data while in the communications mode."

The Examiner concedes that *Everhart et al.* fails to disclose "a prompting component adapted to prompt the vehicle occupant in audio to input information for entering into the communication mode if additional information is needed than the information contained in the voice command, to input information for specifying a particular vehicle parameter for the communications mode if additional information is needed than the information contained in the voice command and to input information to disambiguate between a plurality of matching data while in the communications mode [.]" (*See* Final Office Action, mailed November 29, 2007, p. 3, §3, first full paragraph - p. 4, §3, first paragraph).

Stammler et al. fails to cure the deficiencies of *Everhart et al.* For example, *Stammler et al.* fails to demonstrate that the claimed invention is known in the art. As noted above, claim 36 requires, *inter alia*, "a prompting component adapted to prompt the vehicle occupant in audio to input information . . . to disambiguate between a plurality of matching data by prompting the vehicle occupant to select a particular set of data from the matching data while in the communications mode."

The Examiner asserts that the "the applicant did not specify when the user was prompted." (*See* Final Office Action, mailed November 29, 2007, p. 2, first full paragraph). Applicants disagree with such an assertion. Claim 36 expressly recites "a prompting component adapted to prompt the vehicle occupant in audio to input information . . . **to disambiguate**

between a plurality of matching data by prompting the vehicle occupant to select a particular set of data from the matching data while in the communications mode [.]"

With respect to *Stammler et al.* and its relevance to claim 36, *Stammler et al.* discloses a speech dialog system (SDS) for prompting a user. However, *Stammler et al.* fails to disclose that the SDS is capable of having logic (e.g., hardware and/or software) stored therein that is capable of prompting a user to select from a particular set of data to disambiguate between matching data as presently claimed. For example, *Stammler et al.* fails to address the situation in which matching data (e.g., a plurality of phone numbers associated with a particular contact) may be stored in a directory of the SDS or the manner in which the SDS facilitates the process of allowing the vehicle occupant to further make a selection from a list of matching data (e.g., a particular phone number from a listing of phone numbers associated with the contact name) once such data is determined to exist. At best, *Stammler et al.* discloses the following:

> **A sequence of letters (letter column) is spoken in**, which is provided for selecting complex functions or the input of a plurality of information bits, wherein the letter column is input in a linked form or in blocks and the SDS preferably exhibits one or several or all of the following characteristics: an acknowledgment follows each input pause, in that the last input block is repeated by the speech output; following the acknowledgment through a command "error," "wrong," or the like, the last input block is deleted and the remaining, stored blocks are output acoustically; following the acknowledgment through a command "delete" or the like, all input letters are deleted and this is followed by a new input; following the acknowledgment through a command "repeat" or the like, the blocks stored so far are output acoustically; additional letters or letter blocks are input following the acknowledgment; if necessary, **the letter column is matched to a stored word list and the most suitable word(s) is (are) extracted from this;** alternatively, this matching can already take place following the input of the individual letter blocks; following the acknowledgment through a command "termination" or a similar command input, the input of the letter column is terminated completely; the letter input is concluded with a suitable command following the acknowledgment.

(*See* col. 18, l.15 - 39, emphasis added)

The matching of letters as noted above in *Stammler et al.* is directed to the point in time in which the user audibly provides a sequence of letters whereby such letters are matched to a stored list in order to extract the most suitable word (col. 18, l. 5 and 35-37). *Stammler et al.* is not capable of storing matching data or presenting such data to the vehicle occupant via a listing to allow the vehicle occupant to select the appropriate set of data from the matching data.

The Examiner relies on the following passage of *Stammler et al.* to demonstrate that claim 36 is known in the art (*See* Final Office Action, mailed November 29, 2007, p. 2, second paragraph) :

> The hardware configuration outlined here, in particular with respect to the interfaces, depends strongly on the respective application or the special client requirements and is described here in examples for several application cases. The selection of interfaces can be totally different for other applications (e.g., when linking it to a PC or a work station or when using it in portable telephones). The A/D and the D/A converters can also be integrated on the DSP already. Function Description Using the Example of a Speech-operated Car Telephone
> The dialog sequences are described in the following with the example of a speech-controlled telephone control (e.g., in a motor vehicle).
>
> (*See* col. 12, ll. 28-40)

Nothing in the cited section of *Stammler et al.* above resembles the presently claimed prompting component adapted to prompt the vehicle occupant in audio to input information to disambiguate between a plurality of matching data by prompting the vehicle occupant to select a particular set of data from the matching data while in the communications mode.

The Examiner further relies on Figures 8-10 to demonstrate that *Stammler et al.* discloses the limitations of claim 36 (see Final Office Action, mailed November 29, 2007, p. 2, first full paragraph, and p. 4, §3, ll. 7). No such reference to the presently claimed prompting component adapted to prompt the vehicle occupant in audio to input information to disambiguate between a plurality of matching data by prompting the vehicle occupant to select a particular set of data from the matching data while in the communications mode can be found in the noted figures of *Stammler et al.* For example, *Stammler et al.* discloses the following with respect to Figure 8:

> The speech dialog system has been activated **(81)** with the PTT key and is now awaiting the commands, which are allowed for the further control of the peripheral devices (telephone). The function sequences of the operating state "active" are shown in FIG. 8 in the form of a flow diagram (as example), that is to say for the functions "select telephone directory **(82)**," "delete telephone directory **(83)**," "delete name **(84)**," "select name **(85)**," "dial number **(86)**," store name **(87)**," "store number," listen to telephone directory **(88)**," and the associated actions and reactions (output of name lists, complete or selective deleting, name selection or number selection, number input or name training). Of course, these functions can be complemented or expanded if necessary, or can be replaced partially or totally by other functions. It must be mentioned in general in this connection that the activated SDS can be deactivated at any time, meaning also during one of the function sequences explained further in the following, with the result that the function sequence, which may not be complete, is terminated or interrupted. The SDS can be deactivated, for example, at any time by actuating, if necessary, the existing escape key or the input of a special termination command (e.g., "stop," "terminate," or the like) at defined locations in the dialog.
>
> (*See* col. 13, ll. 21-45)

Again, no such reference to the presently claimed prompting component adapted to prompt the vehicle occupant in audio to input information to disambiguate between a plurality

of matching data by prompting the vehicle occupant to select a particular set of data from the matching data while in the communications mode can be found in the noted figures of *Stammler et al.*

With respect to Figures 9 and 10, *Stammler et al.* merely discloses that the SDS determines whether a name input has occurred, whether the name is recognized correctly, whether the number input is completed, whether the number is confirmed and other operations such as dialing, deleting, forwarding and a desire to correct numbers (col. 13, ll. 46 to col. 14, ll. 19, see also Figures 9-10). As stated above, *Stammler et al.* fails to address the situation in which matching data may be stored in a directory of the SDS or the manner in which the SDS facilitates the process of allowing the vehicle occupant to further make a selection from a list of matching data once such data is determined to exist.

Since the presently claimed presently claimed prompting component adapted to prompt the vehicle occupant in audio to input information to disambiguate between a plurality of matching data by prompting the vehicle occupant to select a particular set of data from the matching data while in the communications mode is not known in the art, the Examiner has not provided the rationale to support a conclusion that claim 36 is obvious. *KSR*, 82 USPQ2d at 1395-1396, M.P.E.P § 2143 at 129.

For at least these reasons, claim 36 is patentable over the proposed combination of *Everhart et al.* and *Stammler et al.*

2. Claim 49 Is Separately Patentable Under 35 U.S.C. § 103(a) Over *Everhart et al.* In View Of *Stammler et al.*

The proposed combination of *Everhart et al.* and *Stammler et al.* does not teach or suggest the claimed invention. For instance, claim 49 requires, *inter alia*, "a prompting component adapted to prompt the vehicle occupant in audio to input information . . . to

disambiguate between a plurality of matching data by prompting the vehicle occupant to select a particular set of data from the matching data while in the communications mode."

The Examiner concedes that *Everhart et al.* fails to disclose "a prompting component adapted to prompt the vehicle occupant in audio to input information for entering into the communication mode if additional information is needed than the information contained in the voice command, to input information for specifying a particular vehicle parameter for the communications mode if additional information is needed than the information contained in the voice command and to input information to disambiguate between a plurality of matching data while in the communications mode [.]" (*See* Final Office Action, mailed November 29, 2007, p. 3, §3, first full paragraph - p. 4, §3, first paragraph).

Stammler et al. fails to cure the deficiencies of *Everhart et al.* For example, *Stammler et al.* fails to demonstrate that the claimed invention is known in the art. As noted above, claim 49 requires, *inter alia*, "a prompting component adapted to prompt the vehicle occupant in audio to input information . . . to disambiguate between a plurality of matching data by prompting the vehicle occupant to select a particular set of data from the matching data while in the communications mode."

The Examiner asserts that "the applicant did not specify when the user was prompted." (*See* Final Office Action, mailed November 29, 2007, p. 2, first full paragraph). Applicants disagree with such an assertion. Claim 49 expressly recites "a prompting component adapted to prompt the vehicle occupant in audio to input information . . . **to disambiguate between a plurality of matching data by prompting the vehicle occupant to select a particular set of data from the matching data while in the communications mode [.]"**

With respect to *Stammler et al.* and its relevance to claim 49 *Stammler et al.* discloses a speech dialog system (SDS) for prompting a user. However, *Stammler et al.* fails

to disclose that the SDS is capable of having logic (e.g., hardware and/or software) stored therein that is capable of prompting a user to select from a particular set of data to disambiguate between matching data as presently claimed. For example, *Stammler et al.* fails to address the situation in which matching data (e.g., a plurality of phone numbers associated with a particular contact) may be stored in a directory of the SDS or the manner in which the SDS facilitates the process of allowing the vehicle occupant to further make a selection from a list of matching data (e.g., a particular phone number from a listing of phone numbers associated with the contact name) once such data is determined to exist. At best, *Stammler et al.* discloses the following:

> **A sequence of letters (letter column) is spoken in**, which is provided for selecting complex functions or the input of a plurality of information bits, wherein the letter column is input in a linked form or in blocks and the SDS preferably exhibits one or several or all of the following characteristics: an acknowledgment follows each input pause, in that the last input block is repeated by the speech output; following the acknowledgment through a command "error," "wrong," or the like, the last input block is deleted and the remaining, stored blocks are output acoustically; following the acknowledgment through a command "delete" or the like, all input letters are deleted and this is followed by a new input; following the acknowledgment through a command "repeat" or the like, the blocks stored so far are output acoustically; additional letters or letter blocks are input following the acknowledgment; if necessary, **the letter column is matched to a stored word list and the most suitable word(s) is (are) extracted from this;** alternatively, this matching can already take place following the input of the individual letter blocks; following the acknowledgment through a command "termination" or a similar command input, the input of the letter column is terminated completely; the letter input is concluded with a suitable command following the acknowledgment.
>
> (*See* col. 18, l.15 - 39, emphasis added)

The matching of letters as noted above in *Stammler et al.* is directed to the point in time in which the user audibly provides a sequence of letters whereby such letters are matched

to a stored list in order to extract the most suitable word (col. 18, l. 5 and 35-37). *Stammler et al.* is not capable of storing matching data or presenting such data to the vehicle occupant via a listing to allow the vehicle occupant to select the appropriate set of data from the matching data.

The Examiner relies on the following passage of *Stammler et al.* to demonstrate that claim 49 is known in the art (*See* Final Office Action, mailed November 29, 2007, p. 2, first full paragraph) :

> The hardware configuration outlined here, in particular with respect to the interfaces, depends strongly on the respective application or the special client requirements and is described here in examples for several application cases. The selection of interfaces can be totally different for other applications (e.g., when linking it to a PC or a work station or when using it in portable telephones). The A/D and the D/A converters can also be integrated on the DSP already. Function Description Using the Example of a Speech-operated Car Telephone
> The dialog sequences are described in the following with the example of a speech-controlled telephone control (e.g., in a motor vehicle).
>
> (*See* col. 12, ll. 28-40)

Nothing in the cited section of *Stammler et al.* above resembles the presently claimed prompting component adapted to prompt the vehicle occupant in audio to input information to disambiguate between a plurality of matching data by prompting the vehicle occupant to select a particular set of data from the matching data while in the communications mode.

The Examiner further relies on Figures 8-10 to demonstrate that *Stammler et al.* discloses the limitations of claim 49 (see Final Office Action, mailed November 29, 2007, p. 2, first full paragraph, and p. 4, §3, ll. 7). No such reference to the presently claimed prompting

component adapted to prompt the vehicle occupant in audio to input information to disambiguate between a plurality of matching data by prompting the vehicle occupant to select a particular set of data from the matching data while in the communications mode can be found in the noted figures of *Stammler et al.* For example, *Stammler et al.* further discloses the following with respect to Figure 8:

> The speech dialog system has been activated **(81)** with the PTT key and is now awaiting the commands, which are allowed for the further control of the peripheral devices (telephone). The function sequences of the operating state "active" are shown in FIG. 8 in the form of a flow diagram (as example), that is to say for the functions "select telephone directory **(82)**," "delete telephone directory **(83)**," "delete name **(84)**," "select name **(85)**," "dial number **(86)**," store name **(87)**," "store number," listen to telephone directory **(88)**," and the associated actions and reactions (output of name lists, complete or selective deleting, name selection or number selection, number input or name training). Of course, these functions can be complemented or expanded if necessary, or can be replaced partially or totally by other functions. It must be mentioned in general in this connection that the activated SDS can be deactivated at any time, meaning also during one of the function sequences explained further in the following, with the result that the function sequence, which may not be complete, is terminated or interrupted. The SDS can be deactivated, for example, at any time by actuating, if necessary, the existing escape key or the input of a special termination command (e.g., "stop," "terminate," or the like) at defined locations in the dialog.
>
> (*See* col. 13, ll. 21-45)

Again, no such reference to the presently claimed prompting component adapted to prompt the vehicle occupant in audio to input information to disambiguate between a plurality of matching data by prompting the vehicle occupant to select a particular set of data from the matching data while in the communications mode can be found in the noted figures of *Stammler et al.*

With respect to Figures 9 and 10, *Stammler et al.* merely discloses that the SDS determines whether a name input has occurred, whether the name is recognized correctly, whether the number input is completed, whether the number is confirmed and other operations such as dialing, deleting, forwarding and a desire to correct numbers (col. 13, ll. 46 to col. 14, ll. 19, see also Figures 9-10). As stated above, *Stammler et al.* fails to address the situation in which matching data may be stored in a directory of the SDS or the manner in which the SDS facilitates the process of allowing the vehicle occupant to further make a selection from a list of similar data once such data is determined to exist.

Since the presently claimed presently claimed prompting component adapted to prompt the vehicle occupant in audio to input information to disambiguate between a plurality of matching data by prompting the vehicle occupant to select a particular set of data from the matching data while in the communications mode is not known in the art, the Examiner has not provided the rationale to support a conclusion that claim 49 is obvious. *KSR*, 82 USPQ2d at 1395-1396, M.P.E.P § 2143 at 129.

For at least these reasons, claim 49 is patentable over the proposed combination of *Everhart et al.* and *Stammler et al.*

3. Claim 59 Is Separately Patentable Under 35 U.S.C. § 103(a) Over *Everhart et al.* In View Of *Stammler et al.*

The proposed combination of *Everhart et al.* and *Stammler et al.* does not teach or suggest the claimed invention. For instance, claim 59 requires, *inter alia*, "a prompting component adapted to prompt the vehicle occupant in audio to input information . . . to disambiguate between a plurality of matching data by prompting the vehicle occupant to select a particular set of data from the matching data while in the communications mode."

The Examiner concedes that *Everhart et al.* fails to disclose "a prompting component adapted to prompt the vehicle occupant in audio to input information for entering into the communication mode if additional information is needed than the information contained in the voice command, to input information for specifying a particular vehicle parameter for the communications mode if additional information is needed than the information contained in the voice command and to input information to disambiguate between a plurality of matching data while in the communications mode [.]" (*See* Final Office Action, mailed November 29, 2007, p. 3, §3, first full paragraph - p. 4, §3, first paragraph).

Stammler et al. fails to cure the deficiencies of *Everhart et al.* For example, *Stammler et al.* fails to demonstrate that the claimed invention is known in the art. As noted above, claim 59 requires, *inter alia*, "a prompting component adapted to prompt the vehicle occupant in audio to input information . . . to disambiguate between a plurality of matching data by prompting the vehicle occupant to select a particular set of data from the matching data while in the communications mode."

The Examiner asserts that the "the applicant did not specify when the user was prompted." (*See* Final Office Action, mailed November 29, 2007, p. 2, first full paragraph). Applicants disagree with such an assertion. Claim 59 expressly recites "a prompting component adapted to prompt the vehicle occupant in audio to input information . . . **to disambiguate between a plurality of matching data by prompting the vehicle occupant to select a particular set of data from the matching data while in the communications mode [.]"**

With respect to *Stammler et al.* and its relevance to claim 59, *Stammler et al.* discloses a speech dialog system (SDS) for prompting a user. However, *Stammler et al.* fails to disclose that the SDS is capable of having logic (e.g., hardware and/or software) stored therein that is capable of prompting a user to select from a particular set of data to disambiguate between matching data as presently claimed. For example, *Stammler et al.* fails to address the situation

in which matching data (e.g., a plurality of phone numbers associated with a particular contact) may be stored in a directory of the SDS or the manner in which the SDS facilitates the process of allowing the vehicle occupant to further make a selection from a list of matching data (e.g., a particular phone number from a listing of phone numbers associated with the contact name) once such data is determined to exist. At best, *Stammler et al.* discloses the following:

> **A sequence of letters (letter column) is spoken in**, which is provided for selecting complex functions or the input of a plurality of information bits, wherein the letter column is input in a linked form or in blocks and the SDS preferably exhibits one or several or all of the following characteristics: an acknowledgment follows each input pause, in that the last input block is repeated by the speech output; following the acknowledgment through a command "error," "wrong," or the like, the last input block is deleted and the remaining, stored blocks are output acoustically; following the acknowledgment through a command "delete" or the like, all input letters are deleted and this is followed by a new input; following the acknowledgment through a command "repeat" or the like, the blocks stored so far are output acoustically; additional letters or letter blocks are input following the acknowledgment; if necessary, **the letter column is matched to a stored word list and the most suitable word(s) is (are) extracted from this;** alternatively, this matching can already take place following the input of the individual letter blocks; following the acknowledgment through a command "termination" or a similar command input, the input of the letter column is terminated completely; the letter input is concluded with a suitable command following the acknowledgment.
>
> (*See* col. 18, l.15 - 39, emphasis added)

The matching of letters as noted above in *Stammler et al.* is directed to the point in time in which the user audibly provides a sequence of letters whereby such letters are matched to a stored list in order to extract the most suitable word (see col, 18, l. 5 and 35-37). *Stammler et al.* is not capable of storing matching data or presenting such matching data to the vehicle

occupant via a listing to allow the vehicle occupant to select the appropriate set of data from the matching data.

The Examiner relies on the following passage of *Stammler et al.* to demonstrate that claim 59 is known in the art ((*See* Final Office Action, mailed November 29, 2007, pp . 2, first full paragraph) :

> The hardware configuration outlined here, in particular with respect to the interfaces, depends strongly on the respective application or the special client requirements and is described here in examples for several application cases. The selection of interfaces can be totally different for other applications (e.g., when linking it to a PC or a work station or when using it in portable telephones). The A/D and the D/A converters can also be integrated on the DSP already. Function Description Using the Example of a Speech-operated Car Telephone
> The dialog sequences are described in the following with the example of a speech-controlled telephone control (e.g., in a motor vehicle).
>
> (*See* col. 12, ll. 28-40)

Nothing in the cited section of *Stammler et al.* above resembles the presently claimed prompting component adapted to prompt the vehicle occupant in audio to input information to disambiguate between a plurality of matching data by prompting the vehicle occupant to select a particular set of data from the matching data while in the communications mode.

The Examiner further relies on Figures 8-10 to demonstrate that *Stammler et al.* discloses the limitations of claim 59 (see Final Office Action, mailed November 29, 2007, p. 2, first full paragraph, and p. 4, §3, ll. 7). No such reference to the presently claimed prompting component adapted to prompt the vehicle occupant in audio to input information to disambiguate between a plurality of matching data by prompting the vehicle occupant to select a particular set

of data from the matching data while in the communications mode can be found in the noted figures of *Stammler et al.* For example, *Stammler et al.* discloses the following with respect to Figure 8:

> The speech dialog system has been activated **(81)** with the PTT key and is now awaiting the commands, which are allowed for the further control of the peripheral devices (telephone). The function sequences of the operating state "active" are shown in FIG. 8 in the form of a flow diagram (as example), that is to say for the functions "select telephone directory **(82)**," "delete telephone directory **(83)**," "delete name **(84)**," "select name **(85)**," "dial number **(86)**," store name **(87)**," "store number," listen to telephone directory **(88)**," and the associated actions and reactions (output of name lists, complete or selective deleting, name selection or number selection, number input or name training). Of course, these functions can be complemented or expanded if necessary, or can be replaced partially or totally by other functions. It must be mentioned in general in this connection that the activated SDS can be deactivated at any time, meaning also during one of the function sequences explained further in the following, with the result that the function sequence, which may not be complete, is terminated or interrupted. The SDS can be deactivated, for example, at any time by actuating, if necessary, the existing escape key or the input of a special termination command (e.g., "stop," "terminate," or the like) at defined locations in the dialog.
>
> (*See*, col. 13, ll. 21-45)

Again, no such reference to the presently claimed prompting component adapted to prompt the vehicle occupant in audio to input information to disambiguate between a plurality of matching data by prompting the vehicle occupant to select a particular set of data from the matching data while in the communications mode can be found in the noted figures of *Stammler et al.*

With respect to Figures 9 and 10, *Stammler et al.* merely discloses that the SDS determines whether a name input has occurred, whether the name is recognized correctly, whether the number input is completed, whether the number is confirmed and other operations such as dialing, deleting, forwarding and a desire to correct numbers (col. 13, ll. 46 to col. 14, ll. 19, see also Figures 9-10). As stated above, *Stammler et al.* fails to address the situation in which matching data may be stored in a directory of the SDS or the manner in which the SDS facilitates the process of allowing the vehicle occupant to further make a selection from a list of similar data once such data is determined to exist.

Since the presently claimed presently claimed prompting component adapted to prompt the vehicle occupant in audio to input information to disambiguate between a plurality of matching data by prompting the vehicle occupant to select a particular set of data from the matching data while in the communications mode is not known in the art, the Examiner has not provided the rationale to support a conclusion that claim 59 is obvious. *KSR*, 82 USPQ2d at 1395-1396, M.P.E.P § 2143 at 129.

For at least these reasons, claim 59 is patentable over the proposed combination of *Everhart et al.* and *Stammler et al.*

The fee of $510.00 as applicable under the provisions of 37 C.F.R. § 41.20(b)(2) is being submitted herewith electronically. Please charge any additional fee or credit any overpayment in connection with this filing to Ford Global Technologies, LLC Deposit Account No. 06-1510.

Respectfully submitted,

Krishnaswamy Venkatesh Prasad et al.

By: /Martin J. Sultana/
Martin J. Sultana
Registration No. 57,739
Attorney for Applicant

Date: April 25, 2008

BROOKS KUSHMAN P.C.
1000 Town Center, 22nd Floor
Southfield, MI 48075-1238
Phone: 248-358-4400
Fax: 248-358-3351

Enclosure - Appendices

VIII. CLAIMS APPENDIX

36. A vehicle control system comprising:

one or more vehicle components for adjusting secondary vehicle functions;

a module for grouping parameters together for each secondary vehicle function to form a vehicle control mode, the vehicle control mode being selectable by a vehicle occupant such that the vehicle occupant is capable of specifying parameters for a selected vehicle control mode, wherein the vehicle control mode comprises a communication mode in which the vehicle occupant specifies parameters related to a telephone located in a vehicle passenger compartment;

a dialog-based speech recognition component adapted to respond to voice commands from the vehicle occupant, the speech recognition component is further adapted to enter into the communications mode and to communicate with the one or more vehicle components associated with each vehicle control mode, wherein the speech recognition component comprises:

a first translating component adapted to translate a voice command from a vehicle occupant into a form which communicates a control signal to the one or more vehicle components and specifies which vehicle control mode to enter into;

a prompting component adapted to prompt the vehicle occupant in audio to input information for entering into the communications mode if additional information is needed than the information contained in the voice command, to input information for specifying a particular vehicle parameter for the communications mode if additional information is needed than the information contained in the voice command and to input information to disambiguate

between a plurality of matching data by prompting the vehicle occupant to select a particular set of data from the matching data while in the communications mode;

a second translating component adapted to translate the information received from the vehicle occupant in response to the prompting component prompting the vehicle occupant to input information so that the received information is translated into a form which communicates a control signal to the one or more secondary vehicle components; and

a human machine interface adapted to communicate with the one or more vehicle components, the human machine interface is capable of communicating in combination with and separate from the speech recognition component.

37. The vehicle control system of claim 36 wherein the selected vehicle control mode is selectable by the vehicle occupant interacting with the human machine interface.

38. The vehicle control system of claim 36 wherein the vehicle control mode further comprises at least one of:

an entertainment mode in which the vehicle occupant specifies parameters that control a vehicle entertainment system;

a navigation mode in which the vehicle occupant specifies parameters related to vehicle position;

a climate control mode in which the vehicle occupant specifies parameters that adjust the climate in the vehicle passenger compartment; and

a vehicle systems mode in which the vehicle occupant specifies parameters related to the vehicle control system or any other predetermined vehicle parameter.

39. The vehicle control system of claim 38 wherein the first translating component is adapted to translate the voice command from a vehicle occupant into a form which communicates a control signal to the one or more vehicle components and to specify which of at least one of the climate control mode, the entertainment mode, the navigation mode, the communications mode and the vehicle systems mode to enter into.

40. The vehicle control system of claim 39 wherein the prompting component is adapted to prompt the vehicle occupant in audio to input information to enter into the at least one of the climate control mode, the entertainment mode, the navigation mode, the communications mode and the vehicle systems mode if additional information is needed than the information contained in the voice command and to input information specifying a particular vehicle mode parameter for the at least one of the climate control mode, the entertainment mode, the navigation mode, and the vehicle system mode if additional information is needed than the information contained in the voice command.

41. The vehicle control system of claim 36 wherein the speech recognition component comprises a central processing unit adapted to execute a sequence of computer

commands that translates the voice command into a signal that is communicatable to the one or more system components.

42. The vehicle control system of claim 36 wherein the human machine interface comprises at least one of a touch panel display, a switch, a capacitive sensor, a resistive sensor, a wheel, a knob, and a camera.

43. The vehicle control system of claim 36 wherein:

the vehicle control system further comprises an interfacing electronics system for providing a primary control analog or digital signal to the one or more vehicle components; and

the speech recognition component comprises a translating component for translating the voice command into a secondary control digital or analog signal which is provided to the interfacing electronics system.

44. The vehicle control system of claim 36 wherein:

the vehicle control system further comprises an interfacing electronics system for providing a primary control analog or digital signal to the one or more vehicle components; and

the human machine interface comprises a translating component for translating the voice command into a secondary control digital or analog signal which is provided to the interfacing electronics system.

45. The vehicle control system of claim 36 wherein the system is adapted to provide feedback to the vehicle occupant that the vehicle occupant entered into the communications mode by performing at least one of audibly stating the particular mode that is entered into with the prompting component, lighting an indicator, and generating text on a screen.

46. The vehicle control system of claim 40 wherein the system is adapted to provide feedback to the vehicle occupant that the vehicle occupant entered into the at least one of the entertainment mode, the navigation mode, the climate control mode and the vehicle system mode by performing at least one of audibly stating the particular mode that is entered into with the prompting component, lighting an indicator, and generating text on a screen.

47. The vehicle control system of claim 40 wherein the prompting component is further adapted to prompt the vehicle occupant in audio to select a particular address from a number of matching addresses while in the navigation mode.

48. The vehicle control system of claim 36 wherein the prompting component is further adapted to prompt the vehicle occupant in audio to select a particular phone number from a number of matching phone numbers while in the communication mode.

49. A vehicle control system comprising:

one or more vehicle components for adjusting secondary vehicle functions;

a module for grouping parameters together for each secondary vehicle function to form a vehicle control mode, the vehicle control mode being selectable by a vehicle occupant such that the vehicle occupant is capable of specifying parameters for a selected vehicle control mode, wherein the vehicle control mode comprises a communications mode in which the vehicle occupant specifies parameters related to a telephone located in a vehicle passenger compartment;

a dialog-based speech recognition component adapted to respond to voice commands from a vehicle occupant, the speech recognition component is further adapted to enter into the communications mode and to communicate with the one or more vehicle components associated with each vehicle control mode, wherein the speech recognition component comprises:

a first translating component adapted to translate a voice command from a vehicle occupant into a form which communicates a control signal to the one or more vehicle components and specifies which vehicle control mode to enter into;

a prompting component adapted to prompt the vehicle occupant in audio to input information for entering into the communications mode if additional information is needed than the information contained in the voice command, to input information for specifying a particular vehicle parameter for the communications mode if additional information is needed than the information contained in the voice command, and to input information to disambiguate between a plurality of matching data by prompting the vehicle occupant to select a particular set of data from the matching data while in the communications mode; and

a second translating component adapted to translate the information received from the vehicle occupant in response to the prompting component prompting the vehicle occupant to input information so that the information received is translated into a form which communicates a control signal to the one or more secondary vehicle components associated with the selected vehicle mode.

50. The vehicle control system of claim 49 wherein the vehicle control mode further comprises at least one of;

an entertainment mode in which the vehicle occupant specifies parameters that control a vehicle entertainment system;

a navigation mode in which the vehicle occupant specifies parameters related to vehicle position;

a climate control mode in which the vehicle occupant specifies parameters that adjust the climate in the vehicle passenger compartment; and

a vehicle systems mode in which the vehicle occupant specifies parameters related to the vehicle control system or any other predetermined vehicle parameter.

51. The vehicle control system of claim 50 wherein the first translating component is adapted to translate the voice command from a vehicle occupant into a form which communicates a control signal to the one or more vehicle components and to specify which of

the at least one of the climate control mode, the entertainment mode, the navigation mode, communications mode and the vehicle systems mode to enter into.

52. The vehicle control system of claim 51 wherein the prompting component is adapted to prompt the vehicle occupant in audio to input information to enter into the at least one of the climate control mode, the entertainment mode, the navigation mode, and the vehicle systems mode if additional information is needed than the information contained in the voice command and to input information specifying a particular vehicle mode parameter for the at least one of the climate control mode, the entertainment mode, the navigation mode, the communications mode and the vehicle system mode if additional information is needed than the information contained in the voice command.

53. The vehicle control system of claim 49 wherein the speech recognition component comprises a central processing unit adapted to execute a sequence of computer commands that translates the voice command into a signal that is communicatable to the one or more system components.

54. The vehicle control system of claim 49 wherein:

the vehicle control system further comprises an interfacing electronics system for providing a primary control analog or digital signal to the one or more vehicle components; and

the speech recognition component comprises a translating component for translating the voice command into a secondary control digital or analog signal which is provided to the interfacing electronics system.

55. The vehicle control system of claim 49 wherein the system is adapted to provide feedback to the vehicle occupant that the vehicle occupant entered into the at least one of the communications mode by performing at least one of audibly stating the particular mode that is entered into with the prompting component, lighting an indicator, and generating text on a screen.

56. The vehicle control system of claim 52 wherein the system is adapted to provide feedback to the vehicle occupant that the vehicle occupant entered into the at least one of entertainment mode, the navigation mode, the climate control mode and the vehicle system mode by performing at least one of audibly stating the particular mode that is entered into with the prompting component, lighting an indicator, and generating text on a screen.

57. The vehicle control system of claim 52 wherein the prompting component is further adapted to prompt the vehicle occupant in audio to select a particular address from a number of matching addresses while in the navigation mode.

58. The vehicle control system of claim 49 wherein the prompting component is further adapted to prompt the vehicle occupant in audio to select a particular phone number from a number of matching phone numbers while in the communication mode.

59. A method for controlling secondary vehicle functions, the method comprising:

adjusting secondary vehicle functions with one or more vehicle components;

grouping parameters together for each secondary vehicle function to form a vehicle control mode, the vehicle control mode being selectable by a vehicle occupant such that the vehicle occupant is capable of specifying parameters for a selected vehicle control mode, wherein the vehicle control mode comprises a communications mode in which the vehicle occupant specifies parameters related to a telephone located in a vehicle passenger compartment;

responding to voice commands from the vehicle component with a dialog-based speech recognition component, the speech recognition component is further adapted to enter into the communications mode and communicate with the one or more vehicle components associated with each vehicle control mode, wherein the speech recognition component comprises:

a first translating component adapted to translate a voice command from a vehicle occupant into a form which communicates a control signal to the one or more vehicle components and specifies which vehicle mode to enter into;

a prompting component adapted to prompt the vehicle occupant in audio to input information for entering into the communications mode if additional information is

needed than the information contained in the voice command and to input information for specifying a particular vehicle parameter for the communications mode if additional information is needed than the information contained in the voice command, and to input information to disambiguate between a plurality of matching data by prompting the vehicle occupant to select a particular set of data from the matching data while in the communications mode;

a second translating component adapted to translate the information received from the vehicle occupant in response to the prompting component prompting the vehicle occupant to input information so that the received information is translated into a form which communicates a control signal to the one or more secondary vehicle components; and

communicating with the one or more vehicle components with a human interface machine, the human machine interface capable of communicating in combination with and separate from the speech recognition component.

60. The method of claim 59 wherein the selected vehicle control mode is selectable by the vehicle occupant interacting with the human machine interface.

61. The method of claim 59 wherein the vehicle control mode further comprises at least one of:

an entertainment mode in which the vehicle occupant specifies parameters that control a vehicle entertainment system;

a navigation mode in which the vehicle occupant specifies parameters related to vehicle position;

a climate control mode in which the vehicle occupant specifies parameters that adjust the climate in the vehicle passenger compartment; and

a vehicle systems mode in which the vehicle occupant specifies parameters related to the vehicle control system or any other predetermined vehicle parameter.

62. The vehicle control system of claim 61 wherein the first translating component is adapted to translate the voice command from a vehicle occupant into a form which communicates a control signal to the one or more vehicle components and to specify which of the at least one of the climate control mode, the entertainment mode, the navigation mode, and the vehicle systems mode to enter into.

63. The method of claim 62 wherein the prompting component is adapted to prompt the vehicle occupant in audio to input information to enter into the at least one of the climate control mode, the entertainment mode, the navigation mode, the communications mode and the vehicle systems mode if additional information is needed than the information contained in the voice command and to input information specifying a particular vehicle mode parameter for the at least one of the climate control mode, the entertainment mode, the navigation mode, and the vehicle system mode if additional information is needed than the information contained in the voice command.

64. The method of claim 59 wherein the speech recognition component comprises a central processing unit adapted to execute a sequence of computer commands that translates the voice command into a signal that is communicatable to the one or more vehicle components.

65. The method of claim 59 wherein the human machine interface comprises at least one of a touch panel display, a switch, a capacitive sensor, a resistive sensor, a wheel, a knob, and a camera.

66. The method of claim 59 further comprising an interfacing electronics system for providing a primary control analog or digital signal to the one or more vehicle components; and wherein the speech recognition component comprises a translating component for translating the voice command into a secondary control digital or analog signal which is provided to the interfacing electronics system.

67. The method of claim 59 further comprising providing feedback to the vehicle occupant that the vehicle occupant entered into the communications mode by performing at least one of audibly stating the particular mode that is entered into with the prompting component, lighting an indicator, and generating text on a screen.

68. The method claim 63 wherein the system is adapted to provide feedback to the vehicle occupant that the vehicle occupant entered into the at least one of the entertainment mode, the navigation mode, the climate control mode and the vehicle system mode by performing at least one of audibly stating the particular mode that is entered into with the prompting component, lighting an indicator, and generating text on a screen.

69. The method of claim 63 wherein the prompting component is further adapted to prompt the vehicle occupant in audio to select a particular address from a number of matching addresses while in the navigation mode.

70. The method of claim 59 wherein the prompting component is further adapted to prompt the vehicle occupant in audio to select a particular phone number from a number of matching phone numbers while in the communication mode.

IX. EVIDENCE APPENDIX

None

X. RELATED PROCEEDINGS APPENDIX

None